

## Participant Questionnaire

Participant number: 18

Date: 7/6/23

Location: Brescia, IT

HRC Study / Algorithms tested: HAMP, STAP-PPF

Study Conducted by: Jared Flowers

Participant link lengths/dimensions: (meters, "spine" is pelvis to shoulder midpoint, "shoulders" is shoulder to shoulder)

|           |           |
|-----------|-----------|
| Spine     |           |
| Neck      |           |
| Shoulders | <u>29</u> |

|                |           |
|----------------|-----------|
| Left Upper Arm | <u>34</u> |
| Left Forearm   | <u>24</u> |

|                 |           |
|-----------------|-----------|
| Right Upper Arm | <u>34</u> |
| Right Forearm   | <u>24</u> |

Participant joint diameter: (meters)

|            |            |
|------------|------------|
| Left Elbow | <u>095</u> |
| Left Wrist | <u>060</u> |

|             |            |
|-------------|------------|
| Right Elbow | <u>097</u> |
| Right Wrist | <u>065</u> |

### Questions:

- A. How safe did you feel? (0 is not safe at all, 5 is neutral, 10 is very safe)
- B. Do you think the robot hindered your motions during the task? (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)
- C. Did the robot perform logical motions? (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)
- D. What is your overall satisfaction with the HRC task? (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot)

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**For Task 1 (engine parts):** (circle your answer to each question)

|   |   |   |   |   |   |   |   |   |   |    |   |
|---|---|---|---|---|---|---|---|---|---|----|---|
| Task 1, Method 1:   |   |   |   |   |   |   |   |   |   |    | 3 |
| Question A: (0 is not safe at all, 5 is neutral, 10 is very safe)   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question B: (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)                   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question C: (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)                        |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question D: (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot) |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |

|   |   |   |   |   |   |   |   |   |   |    |   |
|---|---|---|---|---|---|---|---|---|---|----|---|
| Task 1, Method 2:   |   |   |   |   |   |   |   |   |   |    | 1 |
| Question A: (0 is not safe at all, 5 is neutral, 10 is very safe)   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question B: (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)                   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question C: (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)                        |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question D: (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot) |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |

|   |   |   |   |   |   |   |   |   |   |    |   |
|---|---|---|---|---|---|---|---|---|---|----|---|
| Task 1, Method 3:   |   |   |   |   |   |   |   |   |   |    | 2 |
| Question A: (0 is not safe at all, 5 is neutral, 10 is very safe)   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question B: (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)                   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question C: (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)                        |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question D: (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot) |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |

**Comments:**

Participant number: 18 Date: 7/6/23

**For Task 2 (Sharework parts: metal tabs, cylinders, pallets):** (circle your answer to each question)

|   |   |   |   |   |   |   |   |   |   |    |   |
|---|---|---|---|---|---|---|---|---|---|----|---|
| Task 2, Method 1:   |   |   |   |   |   |   |   |   |   |    | 3 |
| Question A: (0 is not safe at all, 5 is neutral, 10 is very safe)   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question B: (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)                   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question C: (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)                        |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question D: (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot) |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |

|   |   |   |   |   |   |   |   |   |   |    |   |
|---|---|---|---|---|---|---|---|---|---|----|---|
| Task 2, Method 2:   |   |   |   |   |   |   |   |   |   |    | 1 |
| Question A: (0 is not safe at all, 5 is neutral, 10 is very safe)   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question B: (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)                   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question C: (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)                        |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question D: (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot) |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |

|   |   |   |   |   |   |   |   |   |   |    |   |
|---|---|---|---|---|---|---|---|---|---|----|---|
| Task 2, Method 3:   |   |   |   |   |   |   |   |   |   |    | 2 |
| Question A: (0 is not safe at all, 5 is neutral, 10 is very safe)   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question B: (0 is robot completely prevented your motions, 5 is neutral, 10 is robot did not impede you motion)                   |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question C: (0 is robot motions made no sense to you, 5 is neutral, 10 is robot motions made sense to you)                        |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
| Question D: (0 is you would not work in this HRC cell again, 5 is neutral, 10 is you enjoyed working in this cell with the robot) |   |   |   |   |   |   |   |   |   |    |   |
| 0   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |

Comments: *Experience: 4*